

Abstract

The present invention concerns the use of the protein RhoB and its variants to inhibit cancer cell growth, migration, invasion, metastasis, malignant cell transformation, and/or to modulate oncogenic signaling, wherein introducing RhoB directly, or indirectly via a nucleic acid sequence encoding RhoB, into a malignantly transformed cell or a cancerous cell decreases phosphorylation of Erk and Akt proteins inhibiting the PI3-kinase/Akt cell survival pathway and promoting apoptotic cell death. In one aspect, the compositions and methods of the present invention are used to inhibit the malignant transformation of cells by the oncogenes H-Ras, N-Ras, K-Ras, EGFR, or ErbB2, or to inhibit the growth of cancer cells transformed by such oncogenes. The compositions and methods of the present invention may be used to inhibit cancer cell growth, inhibit malignant cell transformation, and modulate oncogenic signaling *in vivo* or *in vitro*.